

GENERIC · POWERTRAIN

P2027

OBD-II TROUBLE CODE

P2027

Evaporative Emissions (EVAP) Fuel Vapor Temperature Sensor Circuit High Voltage

P2027 indicates that the powertrain control module (PCM) has detected an abnormally high voltage signal from the evaporative emissions (EVAP) fuel vapor temperature sensor circuit. The PCM expects the sensor's output to stay within a calibrated range, and a sustained high voltage tells the module that the circuit is likely open, shorted to voltage, or that the sensor's internal resistance has shifted out of specification.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Low	Intermediate	Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- A slight fuel odor around the rear of the vehicle if the EVAP system is not sealing properly
- Failure of an emissions inspection due to the stored code and incomplete readiness monitors
- In rare cases, a rough idle or stumble if the high voltage reading corrupts the PCM's purge strategy
- Intermittent warning light that appears and clears as the circuit fault comes and goes

Common causes, most likely first

- 1 Open circuit in the signal wire between the fuel vapor temperature sensor and the PCM
- 2 Corroded, loose, or damaged connector terminals at the sensor or PCM
- 3 Internal failure of the fuel vapor temperature sensor causing excessive resistance
- 4 Short to voltage on the signal circuit, often from chafed wiring near the fuel tank or evap canister
- 5 Failed PCM driver or internal pull-up resistor on the sensor input circuit
- 6 Aftermarket or incorrect sensor installed that does not match the PCM's calibration



How to diagnose and fix it

- 1 Connect a scan tool and record the freeze-frame data and sensor voltage reading with the key on and engine off
- 2 Visually inspect the sensor connector and wiring harness for corrosion, chafing, or loose pins, repairing as needed
- 3 Measure the sensor's resistance with a digital multimeter and compare it to the manufacturer's temperature-resistance chart
- 4 Back-probe the signal wire at the PCM and check for an open circuit or unwanted voltage with the sensor disconnected
- 5 Check for a short to voltage on the signal circuit by measuring voltage with the sensor unplugged and the key on
- 6 If the circuit tests good, substitute a known-good sensor and clear the code to see if it returns
- 7 If the code persists with a known-good sensor and verified wiring, diagnose the PCM input circuit or replace the PCM as a last resort

What the voltage reading really tells you

- A high voltage on this circuit often means the signal wire is open rather than the sensor being faulty, so resistance testing the sensor alone can send you down the wrong path.
- The fuel vapor temperature sensor is sometimes integrated into the EVAP canister or fuel tank pressure sensor assembly, so a failed sensor may require replacing a larger module rather than a stand-alone part.
- Temperature sensor resistance rises as temperature falls, so a high-voltage code can appear only on cold mornings and clear once the vehicle warms up, mimicking an intermittent wiring fault.
- A poor ground at the sensor body or canister bracket can bias the signal voltage high, and this is frequently overlooked because the ground circuit is not part of the sensor's two-wire connector.
- This code does not always mean the EVAP system is leaking; it is an electrical circuit fault, and chasing a leak with a smoke machine will not resolve a high-voltage signal problem.

Can I keep driving with P2027?

The vehicle remains safe to drive because this is an emissions circuit fault that does not affect engine performance or safety systems. Avoid ignoring the warning light for long, since a persistent fault will prevent the EVAP monitor from running and will fail an emissions inspection.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter with resistance and voltage measurement
- Back-probe kit or pin probes
- Manufacturer's wiring diagram and sensor resistance chart
- Basic hand tools for connector and trim removal



Reading P2027

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 0** Fuel and air metering and auxiliary emission controls.
- 27** The exact fault within that area.

Often seen with

P0442 EVAP System Leak Detected (Small) · **P0452** Evaporative Emission System Pressure Sensor/Switch Low · **P0453** Evaporative Emission System Pressure Sensor/Switch High · **P2026** Evaporative Emissions (EVAP) Fuel Vapor Temperature Sensor C · **P2028** Evaporative Emissions (EVAP) Fuel Vapor Temperature Sensor C

See it working

Watch the animated explainer [How Drive-by-Wire Works: Electronic Throttle Body](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2027/>

